

## SCIENTIFIC NOTE

***Exaireta spinigera* (Diptera: Stratiomyidae): the first published North American records of an Australian soldier fly****J.E. SWANN<sup>1</sup>, R.D. KENNER<sup>1</sup>, R.A. CANNINGS<sup>2</sup> and C.R. COPLEY<sup>2</sup>**

Specimens of a large and distinctive adult fly, recently collected in southwestern British Columbia, could not be identified to family using the available key in McAlpine (1981). However, we recognized it as probably belonging to the Stratiomyidae and finally identified it as *Exaireta spinigera* (Wiedemann), a species unknown in North America according to the published literature.

*Exaireta spinigera* is native to and widespread in Australia and has been introduced to New Zealand and Hawaii (Woodley 2001). It was common in Honolulu, Hawaii by 1900 although it was only first noticed in the late 1890s (Hardy 1960). Our material was identified, in part, by comparison to specimens in the Spencer Entomological Museum collected in Honolulu in 1904. In the National Museum of Natural History Collection, Smithsonian Institution, Woodley (pers. comm.) found a single North American specimen of *E. spinigera*, collected in 1985 from a greenhouse in Santa Barbara, California. However, he did not include the record in his world catalogue of Stratiomyidae (Woodley 2001) because he thought that this single record might not represent an established population. Recent unpublished data suggest it may now be established in California (Woodley, pers. comm.).

Material examined. Specimens are deposited in the Spencer Entomological Museum (UBCZ), the Royal BC Museum (RBCM) and the Canadian National Collection of Insects (CNC). CANADA: BC: Maple Ridge, dead on indoor windowsill, i-2006, J.R. Vockeroth, 1♀ CNC; Vancou-

ver, 4244 West 15<sup>th</sup> Avenue, 22-vi-2002, G.S. Kenner, 1♀ UBCZ; same loc., in house, 14-ix-2005, R.D. & G.S. Kenner, 1♀ UBCZ; Victoria, 657 Beaver Lake Road, in house, 23-ix-2005, C.R. Copley, 1♀ RBCM; same loc., potting shed near compost, 11-vi-2006, C.R. Copley, 1♀ RBCM; Victoria, Goldstream Prov. Park, at Visitor Centre, 16-vii-2006, D.R. Copley, 1♀ RBCM; same loc., at compost, 5-x-2006, D.R. Copley, 3♂ 1♀ RBCM; Victoria, 230 Goward Road, Malaise trap, 28-v-to 11-vi-2005, N.N. Winchester, 1♀ RBCM.

Unlike native species of Nearctic Stratiomyidae, *E. spinigera* has vein R<sub>5</sub> almost reaching the tip of the wing and cell d is roughly 2 to 2.5 times as long as broad. These characters are similar to those in the families Xylomyidae and Xylophagidae. However, these families have tibial spurs; *E. spinigera* lacks these on all legs. In order to include *E. spinigera* in McAlpine's (1981) key to Nearctic Diptera families, couplet 34 (p. 99) should be modified as follows:

**34.** C usually ending well before, rarely nearly at, wing apex; branches of R almost always more or less crowded anteriorly, and ending in margin well before wing apex; cell d (or dm) almost always short, usually little longer than wide (Fig. 30); if R<sub>5</sub> ending near wing apex and cell d at least 2 times as long as broad, then four marginal scutellar spines present (*Exaireta*). Tibial spurs usually absent .....**Stratiomyidae**

C extending beyond wing apex; branches of R not crowded anteriorly, with R<sub>5</sub> ending at or beyond wing apex; cell d at least two times as long as broad (Fig. 29);

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scutellar margin bare or with at most 2 prominent spines. Tibial spurs present on at least mid and hind tibiae .....35

To include *Exaireta* in James' (1981) key to Nearctic stratiomyid genera, couplet 5 (p. 500) should be modified as follows:

5. Scutellum with six spines (Fig. 50) .....*Beris* Latrielle

Scutellum with four spines .....5a

5a. Subscutellum at most with some tomentum; dorsum of the thorax metallic green/blue; specimens approximately 5 mm long .....*Actina* Meigen

1 sp., *viridis* (Say); widespread

Subscutellum with tomentum and lateral pilose areas with fine, long white/translucent hairs; dorsum of thorax black; specimens over 10 mm long

.....*Exaireta* Schiner

1 sp., *spinigera* (Wiedmann); introduced, BC, California.

Larvae of *E. spinigera* live in a wide variety of decaying organic material

(Hudson 1950, Woodley 1995). Adults hover around rotting vegetation and have been collected by sweeping vegetation, from native flowers, in Malaise traps, and at lights (Woodley 1995). Because *E. spinigera* is so conspicuous, is readily collected, and has only been observed in southwestern British Columbia during the past five years, its introduction probably was not much earlier than 2002. The species likely was introduced to BC in association with potted plants or rotting vegetable matter from either California or Hawaii. *Exaireta spinigera* has been captured at the same location in Victoria in successive years implying that it has overwintered there. Even though it is only currently known from a few synanthropic localities, the behaviour and life history of this species suggest that it is likely to become (or already is) widespread in southwestern BC.

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## REFERENCES

- Hardy, D.E. 1960. Diptera: Nematocera-Brachycera (except Dolichopodidae). Insects of Hawaii 10. University of Hawaii Press, Honolulu, Hawaii.
- Hudson, G.V. 1950. Fragments of New Zealand Entomology. A popular account of all the New Zealand cicadas. The natural history of the New Zealand glow-worm. A second supplement to the butterflies and moths of New Zealand and notes on many other native insects. Ferguson and Osborn, Wellington, New Zealand.
- James, M.T. 1981. Stratiomyidae, pp. 497-511. In J.F. McAlpine, B.V. Peterson, G.E. Shewell, H.J. Teskey, J.R. Vockeroth, and D.M. Wood (eds), Manual of Nearctic Diptera, Volume 1, Research Branch, Agriculture Canada, Monograph No. 27.
- McAlpine, J.F. 1981. Key to Families-Adults, pp. 89-124. In J.F. McAlpine, B.V. Peterson, G.E. Shewell, H.J. Teskey, J.R. Vockeroth, and D.M. Wood (eds), Manual of Nearctic Diptera, Volume 1, Research Branch, Agriculture Canada, Monograph No. 27.
- Woodley, N.E. 1995. The Genera of Beridinae (Diptera: Stratiomyidae) Memoirs of the Entomological Society of Washington 16.
- Woodley, N.E. 2001. A World Catalog of the Stratiomyidae (Insecta: Diptera). Backhuys Publishers, Leiden, Netherlands.